

I claim:

1. A telephony system in which a call can be handed off from a packet-based network to a circuit-switched network when the call invokes a feature that is supported by the circuit-switched network but is not implemented on the packet-based network,

5 the system comprising:

a circuit switched network switch that routes the call onto a first voice trunk and transmits an initial address message associated with the call;

a first packet voice gateway, which sets up a connection between the first voice trunk and the packet-based network;

10 a first connection gateway that receives the initial address message;

a feature server that receives the initial address message forwarded from the first connection gateway, and conveys a routing message to a second connection gateway if the invoked feature cannot be provided by the feature server;

15 a second connection gateway that selects a second trunk onto which the call is routed, which second trunk is in a shared trunk group connected to a second circuit switched network switch;

a second packet voice gateway that sets up a connection between the packet-based network and the second trunk;

20 a second circuit-switched network switch that is connected to the circuit-switched network, which second circuit-switched switch receives the call via the second trunk and provides the feature invoked by the call.

2. The apparatus of claim 1, in which the second circuit-switched network switch also routes the call to its destination by way of the circuit-switched network.

3. The apparatus of claim 1, in which the second circuit-switched network switch also routes the call to a third packet voice gateway for transmission to its destination by way of the packet-based network.

4. The apparatus of claim 1, in which the routing message from the feature server to the second connection gateway includes a trunk selection parameter, which parameter is determined by the type of feature invoked by the call, and where the second connection gateway selects the second trunk based upon the trunk selection parameter.

5. The apparatus of claim 4, in which the second circuit-switched network switch provides at least one feature to the call, which feature is determined by the particular second trunk in the shared trunk group on which the call is received.

6. A method for handing off a call from a packet-based telephony system to a circuit-switched telephony system for call processing, the method comprising the steps of:

forwarding to a packet network feature server signaling associated with the

5 initiation of the call;

determining that the call invokes a feature that cannot be provided by the packet-based network;

routing the call from the packet-based network to a circuit-switched switch within a circuit-switched network;

10 processing the call on the circuit-switched network.

7. The method of claim 6, in which the step of forwarding signaling associated with the call further comprises the substeps of:

receiving at a connection gateway an initial address message generated by an SS7 network;

5 transmitting the initial address message from the connection gateway to the feature server.

8. The method of claim 6, in which the step of determining that the call invokes a feature that cannot be provided by the packet-based network comprises the step of the feature server assessing the initial address message.

9. The method of claim 6, in which the step of routing the call from the packet-based network to a circuit-switched switching system is further comprised of the substeps of:

5 assigning a trunk selection parameter corresponding to the feature invoked by the call;

routing the call onto one of a plurality of trunks in a shared trunk group, which trunk is chosen based upon the assigned trunk selection parameter.

10. The method of claim 6, in which the step of processing the call on the circuit-switched network by the circuit-switched switch is comprised of the substeps of:

implementing the invoked feature on an SS7 network;

5 routing the call to a second packet voice gateway for further transmission via the packet-based network.

11. A method for routing a telephone call from a packet network to one of a plurality of circuit switched trunks, the method comprising the steps of:

5 selecting a destination call processing entity within the packet network by a first call processing entity, which destination call processing entity is connected to the plurality of circuit switched trunks;

conveying a trunk selection parameter from the first call processing entity to the selected destination call processing entity;

routing the call onto one of the plurality of circuit switched trunks based upon the trunk selection parameter.